

## BONE CONDUCTING FLOATING MASS TRANSDUCERS

### ABSTRACT OF THE DISCLOSURE

5 A floating mass transducer for assisting hearing in  
a person is provided. Inertial vibration in the floating mass  
transducer (100) produces vibrations in the inner ear. In an  
exemplary embodiment, the floating mass transducer comprises a  
magnet assembly (12) and a coil (14) secured inside a housing  
10 (10) which is attached to bone within the middle ear. The  
coil is more rigidly secured to the housing than the magnet.  
The magnet assembly and coil are configured such that  
conducting alternating electrical current through the coil  
results in vibration of the magnet assembly and coil relative  
15 to one another. The vibration is caused by the interaction of  
the magnetic fields of the magnet assembly and coil. Because  
the coil is more rigidly secured to the housing than the  
magnet assembly, the vibrations of the coil cause the housing  
to vibrate. The floating mass transducer may generate  
vibrations in the inner ear by being attached to the skull or  
through a mouthpiece.

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